REMARKS

Claim Changes

The claims have been amended to more particularly point out the inventions therein. Support for the amendments may be found at least in Fig.s 4-6 and the discussion thereof. No new matter has been added.

Claims 1-3, 8-10, 16-17 and 20-21 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over US Labedz et al. (US 4,847,869) in view of Dent (US 20010001008) in view of Husted (US 7,386,063).

Claims 4 and 6 stand rejected under 35 U.S.C. § 103 as being unpatentable over US Labedz et al. (US 4,847,869) in view of Dent (US 20010001008) in view of Husted (US 7,386,063) in view of Khullar et al. (US 6,4009,928).

Rejection of claims 11, 13-14, 22, 24-25 and 27 under 35 U.S.C. § 103 (a) as being unpatentable over Labedz in view of US 5970399 (Rostany)

Neither Labedz, Dent, nor Husted, taken alone or in combination, disclose or suggest all of the claim limitations. None of the above references, taken alone or in combination, disclose or suggest all of the limitations as set forth in the claims.

Labedz discloses an approach for signal acquisition and phase error compensation for radio transmission data, primarily QPSK data. Labedz discloses to use a sync signal in either the I or Q components of the signal. See, col. 3, lns. 5-9 ("in the preferred embodiment, the acquisition synchronization sequence is transmitted only on the I vector of the quadrature modulated channel"). Labedz clearly does not perform a hybrid synchronization and selectively

modify one or more thresholds associated with said lower order modulation, as recited by the above amended claims. For example, for claim 1, Labedz does not perform a lower order detection and performing a higher order detection on the same portion of the signal, and to modify said synchronization word timing result to be said lower order synchronization word timing result when said higher order synchronization word indication is absent, and to be said higher order synchronization word timing result when said higher order synchronization word indication is present.

Dent merely discloses a synchronization technique which considers the possibility of detecting for two different modulation schemes in the received data so the system can operate with two different types of modulated data. Dent also does not disclose or suggest a hybrid synchronization and selectively modify one or more thresholds associated with said lower order modulation, as recited by the above amended claims.

The examiner points out that Dent describes using different modulation types in a dual GMSK modulator (e.g., GMSK and 16QAM). The applicants note that their described invention does not utilize different (or dual) modulation types in the examined portion of the complex signal. The modulation type in the examined portion of the complex signal may remain the same (e.g., BPSK), regardless of the lower order (e.g., DBPSK) or higher order (e.g., QPSK) modulation detection and correlation process that is being performed, as described in the amended claim 1. The modulation of the received signal is not required to during any of the described demodulation and correlation processes, and therefore, no attempt is made to determine the modulation type at any point in the described method (i.e., the modulation type is always that of the type used in the lower order modulation detection and correlation process). The advantage of the applicant's method relies in the fact that a higher order (e.g., QPSK)

modulation detection and correlation process performed over a portion of the received lower order modulation (e.g., BPSK) signal will result in a lower falsing rate for the correlation process than a lower order modulation detection and correlation process (see paragraphs [0015], [0020], [0024-0027], etc. in the applicant's specification).

Husted merely appears to be relied upon for use of different types of modulation. Husted also does not appear to disclose a hybrid synchronization approach as claimed.

As none of the 5 references applied appear to disclose or suggest using a hybrid synchronization approach. The combination of references does not render the above claims as being unpatentable.

Furthermore, the combination is not supported by a reasonable scientific basis. Specifically, Labedz et al teaches a method of performing both an I sync word search, and a Q sync word search on a complex received signal. In Applicant's invention, the synchronization word timing results of the I sync word search could not be different than the synchronization timing results of the Q sync word search since the search is performed on the same signal portion (e.g. the same complex signal). Thus, there would be no advantage to combining the timing results of the I sync word search with the Q sync word search, since they are convey the same information about the same complex signal. That is to say, that the I signal (sync word) timing is directly linked (i.e., equal) to the Q signal (sync word) timing. Accordingly, the suggestion to modify Labedz as proposed in the rejection is without a reasonable basis.

Regarding claim 11, the examiner has not cited any prior art (or combination of Labedz and Rostany) that teach estimating a signal carrier to interference plus noise value, that must persist for a second predetermined period of time, in conjunction with estimating a signal energy

measure, that also must persist for a first predetermined period of time, wherein both predetermined periods of time comprise a majority of an expected burst) in order to signal a valid burst. Therefore, the applicant's method does not rely on signal energy (or squelch) determination alone to detect a valid burst. The examiner appears to acknowledge that Labedz does not teach the applicant's method, and provides no evidence that any combination of Rostany and Labedz teaches the applicant's method. Thus, the methods described in the prior art could falsely detect a burst of high energy noise as a valid burst. Applicant's described method avoids these problems, as well can be combined with the synchronization word timing determination method described in claim 1 (as illustrated in claim 10 – see also Fig. 4 in applicant's specification).

Since the applicants believe that claim 11 is unique, claims 12-16 should also be allowed, since they are dependent on claim 11.

Applicant respectfully submits that the combination of Labedz and Rostany does not teach or suggest all the claim limitations as set forth in independent claims 11 and 22, as amended. For example, independent claims 11 and 22 recite "signaling a valid burst detection if said signal energy exceeds said designated signal energy threshold value for a first predetermined period of time and said CIR exceeds said designated CIR threshold value for a second predetermined period of time, wherein said first predetermined period of time and said second predetermined period of time comprise a majority of an expected burst duration" which is not taught or suggested in the combination of Labedz and Rostany.

According to Applicant's claim, a valid burst detection is signaled "if said signal energy exceeds said designated signal energy threshold value for a first predetermined period of time and said CIR exceeds said designated CIR threshold value for a second predetermined period of

time." In contrast, Labedz merely discloses a correlation process on a received I or Q component of the signal. The correlation process in Labedz is primarily directed toward the phase of the signal, rather than burst detection. In the embodiment of Fig. 2, referenced by the Office action, Labedz discloses to sum the I and Q correlation signals to determine if it has a minimum value to qualify as a time slot. Col. 3: 50-57. In the embodiment of Fig. 3, Labedz addresses a problem of a phase shift by using two correlators and using a magnitude hold function which holds the magnitude of a signal for a period of time if the signal exceeds a threshold. See, Fig. 4, col. 5: 49-60; col. 6: 25-65. Labedz does not perform burst detection as claimed.

Rostany merely discloses comparing energy measurement signal to a predetermined threshold, thereby determining the amount of out-band noise that is acceptable and accordingly outputting a control signal (Rostany, col. 4, lines 5-53).

Neither Labedz nor Rostany disclose that a valid burst detection is signaled based on comparisons of signal energy and CIR with respective thresholds for a first and a second predetermined periods of time respectively. Moreover, Labedz and Rostany nowhere disclose that "first predetermined period of time and said second predetermined period of time comprise a majority of an expected burst duration" as recited in Applicant's amended claims 11 and 22. Since the combination of Labedz and Rostany fails to disclose Applicant's claimed invention as claimed in independent claims 11 and 22, Applicant respectfully requests withdrawal of the rejection of claims 11 and 22 under 35 USC 103(a). Applicant requests that claims 11 and 22 now be passed to allowance.

Dependent claims 13-14, 24-25 and 27 depend from, and include all the limitations of independent claims 11 and 22. Therefore, Applicant respectfully requests the reconsideration of dependent claims 13-14, 24-25 and 27 and requests withdrawal of the rejection.

Conclusion

Applicant has reviewed the other references of record and believes that Applicant's claimed invention is patentably distinct and nonobvious over each reference taken alone or in combination. Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Such action is earnestly solicited by the Applicant. Should the Examiner have any questions, comments, or suggestions, the Examiner is invited to contact the Applicant's attorney or agent at the telephone number indicated below.

Please charge any fees that may be due to Deposit Account 502117, Motorola, Inc.

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Respectfully submitted,

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